REMARKS/ARGUMENTS

The arguments submitted herein incorporate the patentability arguments and amendments Applicants discussed with the Examiner during the phone interview on October 18, 2007. Applicants submit that the arguments and amendments presented herein make the substance of the phone interview of record to comply with 37 CFR 1.133. If the Examiner believes that further information on the interview needs to be made of record to comply with the requirements, Applicants request the Examiner to identify such further information.

1. Claims 1, 4, 8-12, 15, 19-23, 26, and 29-31 are Patentable Over the Cited Art

The Examiner rejected claims 1, 4, 8-12, 15, 19-23, 26, and 29-31 as anticipated (35 U.S.C. §102(e)) by Grun (U.S. Patent No. 6,629,166). Applicants traverse.

Amended claim 1 recites signaling, as part of a diagnostic operation with respect to an Input/Output (I/O) controller, a reconnection inhibitor over a bus to cause the reconnection inhibitor to perform an operation to access the bus to inhibit the I/O controller from accessing the bus; transmitting, as part of the diagnostic operation, by an initiator, I/O requests on the bus to the I/O controller, wherein the I/O requests are queued in an I/O queue, wherein the I/O controller is inhibited by the reconnection inhibitor from draining the queue while the initiator transmits requests to the I/O controller; signaling the reconnection inhibitor to perform an operation to cease accessing the bus, wherein the I/O controller accesses the bus to complete processing of an I/O request and process further I/O requests in the I/O queue in response to the reconnection inhibitor ceasing to issue requests on the bus; and performing diagnostic testing of the I/O controller when the I/O queue is at different levels, wherein the level of I/O requests pending in the I/O queue is controlled by the signaling of the reconnection inhibitor, wherein the I/O queue is increased by signaling the reconnection inhibitor to access the bus to inhibit the I/O controller from accessing the bus and depleting the I/O queue, and wherein the I/O queue is decreased by signaling the reconnection inhibitor to cease accessing the bus to inhibit the I/O controller.

Applicants amended claim 1 to include the requirements of claims 5 and 6 and to further recite that the reconnection inhibitor is signaled to perform an operation to access the bus.

The Examiner cited col. 10, lines 15-23, col. 11, lines 12-14, and the target channel adapter 22 of Grun as disclosing the claim requirement of signaling, as part of a diagnostic

operation with respect to an Input/Output (I/O) controller, a reconnection inhibitor over a bus to cause the reconnection inhibitor to access the bus to inhibit the I/O controller from accessing the bus. (FOA3, pg. 3) Applicants traverse.

Grun mentions that a target service interface provides an interface by which an I/O controller may access the message and data services of a target channel adapter and includes a set of service connections to transfer messages and data between an I/O controller and an initiator. Primitives may be used to control traffic over service connection. (Grun, col. 10, lines 5-9) The cited col. 10 mentions that the primitives may be specific to the I/O controllers or specific to the types of information transfer between an initiator and an I/O controller. Initiators and I/O controllers may be clients of a fabric and a target channel adaptor is part of the conduit for conducting messages and data between two clients. (Grun, col. 10, lines 15-27) The cited col. 11 mentions that an initiator may send a message to an I/O controller, and the I/O controller may transfer data between the initiator and the I/O controller. Upon completion, the I/O controller may send a complete message. (Grun, col. 11, lines 7-15)

The cited cols. 10 and 11 discuss techniques, such as primitives, a target channel adaptor, and a target service interface that are used to transfer data and messages between an initiator and I/O controller. However, nowhere do the cited cols. 10 and 11 anywhere disclose or mention signaling, as part of a diagnostic operation with respect to an Input/Output (I/O) controller, a reconnection inhibitor over a bus to cause the reconnection inhibitor to access the bus to inhibit the I/O controller from accessing the bus. The cited Grun does not disclose causing a reconnection inhibitor to access a bus to inhibit an I/O controller from accessing the bus. Instead, the cited Grun discusses how to transfer data and messages between an initiator and I/O controller, and a channel adaptor that acts as a conduit for conducting messages. .

The Examiner cited col. 9, lines 52-55 and col. 11, lines 12-14 as disclosing the claim requirement that the I/O controller is inhibited from draining the queue while the initiator transmits requests to the I/O controller as part of a diagnostic operation. (FOA3, pg. 4) Applicants traverse.

The cited col. 9 mentions that the initiator may push or pull data from or to the I/O controller's memory, and at the conclusion of the transfer pass control of the memory back to the I/O controller. The cited col. 11 mentions that an I/O controller may send a message to the initiator notifying the initiator that the information transfer has completed.

The cited cols. 9 and 11 discuss communication between an initiator and an I/O controller. However, nowhere do the cited cols. 9 and 11 anywhere disclose or mention that the I/O controller is inhibited from draining the queue by a reconnection inhibitor accessing the bus while a separate initiator transmits requests to the I/O controller as part of a diagnostic operation. Instead, the cited cols. 9 and 11 discuss how an initiator and I/O controller may communicate and push and pull data from memory.

The Examiner cited col. 10, lines 24-30 of Grun as disclosing the claim requirement that the level of I/O requests pending in the I/O queue, as part of a diagnostic information, is controlled by the signaling of the reconnection inhibitor. (FOA3, pgs. 4-5). Applicants traverse.

The cited col. 10 mentions that a target channel adapter is part of the conduit for conducting messages and data between the two clients. A target service interface implements an interface exposed to an I/O controller which allows a control to access the services of a switched fabric for transmitting messages and an adaptor.

Nowhere does the cited col. 10 disclose that as part of a diagnostic operation, the cited I/O controller is inhibited by a separate reconnection inhibitor from draining its queue while a separate initiator transmits request to the I/O controller to test the queue at different levels. Moreover, nowhere does the cited Grun disclose the claim requirement that one device send requests to fill the I/O queue while another device accesses the bus to inhibit the I/O controller from accessing the bus and draining its queue.

In the Final Office Action, the Examiner found that the cited channel adaptor corresponds to the claimed reconnection inhibitor finding that the channel adaptor blocks the transfer of data to the initiator. Applicants traverse the Examiner's findings concerning the cited channel adaptor's operations. Grun mentions that the channel adaptor allows connection of an I/O controller to a channel based switched fabric and supports transferring of messages and data between an I/O controller and initiating unit. (Grun, col. 6, lines 22-30). The cited cols. 9 and 11 discuss communication between an initiator and an I/O controller. Applicants submit that a channel adaptor supporting the transferring of messages and data as mentioned in the cited Grun does not disclose that the channel adaptor is signaled as part of a diagnostic operation to access a bus to inhibit an I/O controller from accessing the bus and draining its queue. Applicants submit the Examiner has not cited any part of Grun that discloses that the channel adaptor or any other

component is signaled to access the bus to prevent an I/O controller from draining its queue as part of a diagnostic operation to test the I/O queue at different levels.

The Examiner cited col. 11, lines 12-14 and col. 9, lines 52-55 of Grun as disclosing the additional requirements of claim 5 added to amended claim 1. (FOA3, pg. 7) Applicants traverse.

The cited col. 9 mentions that the initiator may push or pull data from or to the I/O controller's memory, and at the conclusion of the transfer pass control of the memory back to the I/O controller. The cited col. 11 mentions that an I/O controller may send a message to the initiator notifying the initiator that the information transfer has completed.

The cited cols. 9 and 11 discuss communication between an initiator and an I/O controller. However, nowhere do the cited cols. 9 and 11 anywhere disclose or mention that the reconnection inhibitor, previously signaled to access a bus to inhibit an I/O controller access as part of a diagnostic operation, is further signaled to cease accessing the bus to allow the I/O controller to access the bus to complete processing queued I/O requests.

The Examiner cited col. 11, lines 12-14 and col. 9, lines 52-55 of Grun as disclosing the additional requirements of claim 6 added to amended claim 1. (FOA3, pgs. 7-8) Applicants traverse.

The cited col. 9 mentions that the initiator may push or pull data from or to the I/O controller's memory, and at the conclusion of the transfer pass control of the memory back to the I/O controller. The cited col. 11 mentions that an I/O controller may send a message to the initiator notifying the initiator that the information transfer has completed.

The cited cols. 9 and 11 discuss communication between an initiator and an I/O controller. However, nowhere does the cited Grun disclose controlling the level of I/O requests in a queue by signaling a reconnection inhibitor. The Examiner has not cited any part of Grun that discloses increasing the I/O queue by signaling the reconnection inhibitor to inhibit I/O controller access to the bus and decreasing the I/O queue by signaling the reconnection inhibitor to cease accessing the bus. Further, nowhere does Grun disclose that the cited channel adaptor increases and decreases an I/O queue level by signaling a reconnection inhibitor to access or cease access to inhibit or not inhibit the I/O controller from accessing the bus.

Accordingly, Applicants submit that amended claim 1 is patentable over the cited art because the cited Grun does not teach or suggest all the claim requirements.

Amended claims 12 and 23 substantially include the requirements of amended claim 1 in system and device format. Applicants amended claim 12 to include the requirements of claims 16 and 17 and amended claim 23 to include the requirements of claims 27 and 28. The Examiner cited the same sections of Grun with respect to claims 12 and 23 (FOA3, pgs. 5-6, 9-10) that were cited with respect to claim 1. In claim 23, the "device" element performs the operations of the "reconnection inhibitor" of other claims. Accordingly, Applicants submit that amended claims 12 and 23 are patentable over the cited Grun for the reasons discussed with respect to amended claim 1.

Claims 2-6, 8-11, 13-17, 19-22, and 24-31 are patentable over the cited art because they depend from one of claims 1, 12, and 23. The following dependent claims provide additional grounds of patentability over the cited art.

2. Claims 2, 3, 13, 14, 24, and 25 are Patentable Over the Cited Art

The Examiner rejected claims 2, 3, 13, 14, 24, and 25 as obvious (35 U.S.C. §103) over Grun in view of Downer (U.S. Patent No. 6,223,244). Applicants traverse.

First off, these claims are patentable over the cited art because they depend from one of amended claims 1, 12, and 23, which are patentable over the cited art for the reasons discussed above. Moreover, the following dependent claims provide further grounds of patentability over the cited art.

Claims 2, 13, and 24 depend from claims 1, 12, and 23 and additionally require that the initiator accesses the bus at a higher priority than the reconnection inhibitor, and wherein the reconnection inhibitor accesses the bus at a higher priority than the I/O controller.

The Examiner cited col. 1, lines 56-65 of Downer as teaching the additional requirements of these claims. (FOA3, pgs. 11-12). Applicants traverse.

The cited col. 1 mentions that each SCSI device has a unique bus ID, where SCSI IDs range from highest priority to lowest priority, such that higher priority devices may access the SCSI bus over lower priority devices. Hosts typically have the highest SCI ID, allowing them to initiate requests with minimum interference.

Although the cited Downer discusses SCSI priority in general, the Examiner has not cited any part of Downer that teaches or suggests assigning a highest priority to an initiator that submits I/O requests to an I/O controller, which is assigned the lowest priority, as part of a

diagnostic operation while a reconnection inhibitor (or device for claim 24) that inhibits the I/O controller from draining the I/O queue is assigned a lower priority than the initiator and higher priority than the I/O controller. For instance, the cited Downer discusses how a host may have the highest SCSI priority (ID) and other devices lower priorities. However, the claims require a specific assignment of bus priority to devices performing specific functions in a diagnostic operation with respect to the I/O controller. Nowhere does the cited Downer teach or suggest that an initiator transmitting the I/O requests to the I/O controller for the queue have a higher priority than a reconnection inhibitor blocking the I/O controller from access the bus to drain its queue. The cited Downer's general discussion of priority assignment for SCSI bus access does not teach or suggest the specific claimed assignment of priorities to specific devices involved in a diagnostic operation as claimed.

Accordingly, the additional requirements of claims 2, 13, and 24 provide additional grounds of patentability over the cited art.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-4, 8-14, 17, and 19-26, and 29-31 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 09-0449.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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